

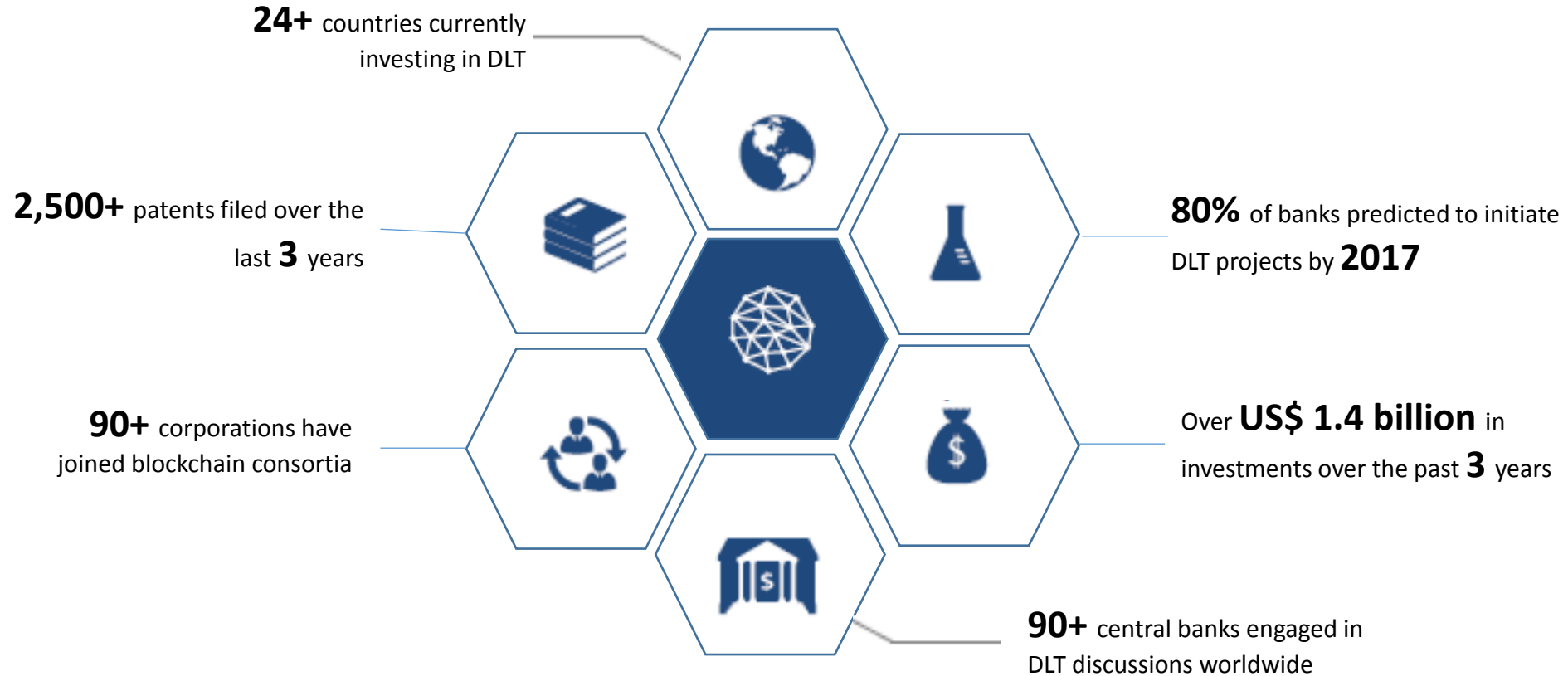
Blockchain Powered Financial Inclusion



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Blockchain Market Overview



Awareness of DLT(Distributed Ledger Technology) has grown rapidly, but significant hurdles remain to large-scale implementation



Nascent collective standardization efforts



An uncertain and unharmonized regulatory environment

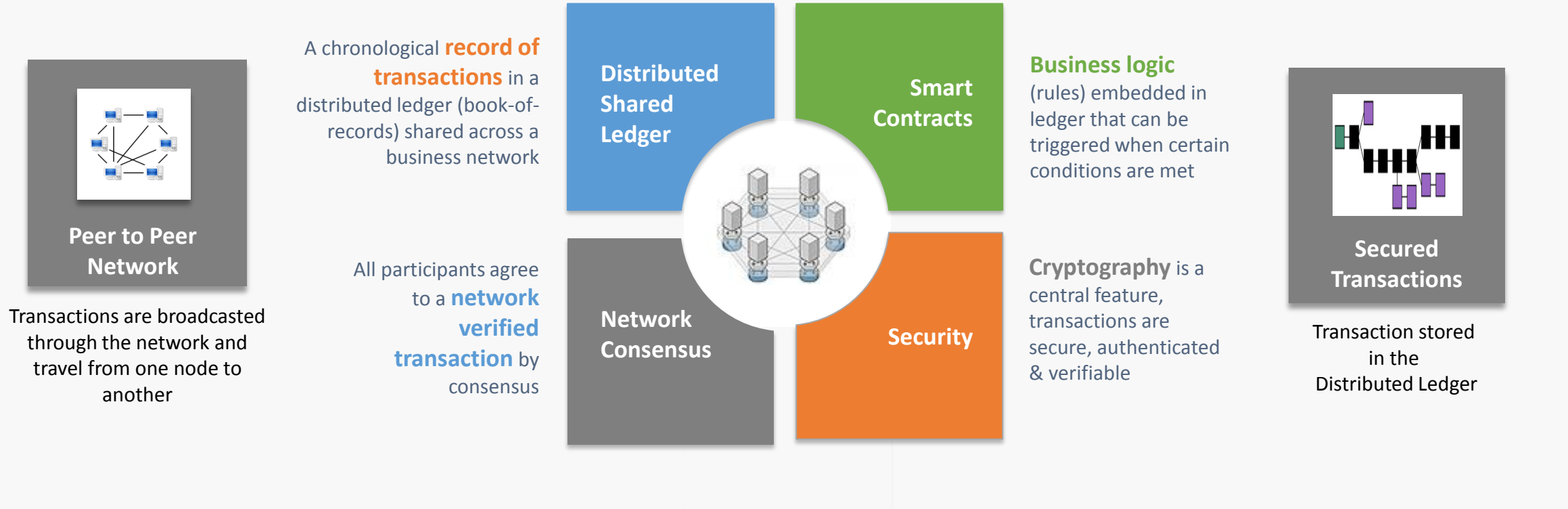


An absence of formal legal frameworks

Source: World Economic Forum

Blockchain key constructs

Key constructs of Blockchain technology



Lower Cost



Increased Transparency



Greater Security



Faster Settlement

What is the total Market Opportunity from the Unbanked Population?

Mobile and Blockchain are providing solutions to this market
Blockchain will help distribute value than wealth

\$380 Bn

Estimated revenue generated by banks by 2020 within emerging markets from unbanked population

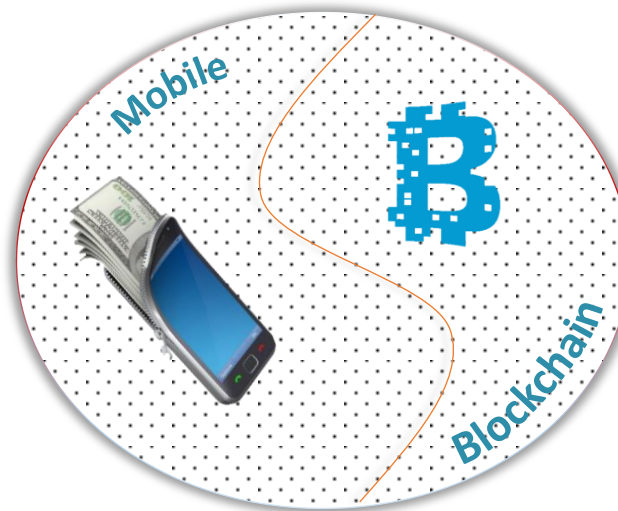


As per CGAP, for people living in rural areas on less than **\$2.5 a day**, **mobile money is emerging as a common source of financial inclusion**

Mobile penetration even in **low-income** countries is **over 50%**



Mobile banking and payment solutions are **opening up new access routes** to and for customers



According to Santander, blockchain could reduce banks' infrastructure costs attributable to cross-border payments, securities trading and regulatory compliance by between **\$15-20 Bn per annum by 2022**

Blockchain supports **smart transactions, reduces cost and settlement time** and eliminates the need for third party intermediaries



Payments and remittance settlement can happen rapidly allowing **people to access their capital when they need it**

Source: World Bank Development Indicators. Financial Access Survey, Accenture, CGAP(Consultative Group to Assist the poor)

How Banks/FIs are using Blockchain to Foster Financial Inclusion

Inclusion through blockchain-powered Economic Identity

- Blockchain provides **digital identity to individuals** with enhanced privacy, so that identity is restricted to devices as well as other individuals with access.
- Financial institutions have the ease of **reissuing identity documents and data** in case the documents are lost or stolen.
- **BanQu is an Economic Identity technology platform** for the creation of a personal digital profile comprised of various records of personal, financial and other activities. That profile is recognized and accepted by financial institutions as legitimate identification information.

Blockchain-powered services for refugees and migrants

- **Regalii** is an international mobile payments platform that allows immigrants to pay their families' bills anywhere in the world through SMS.
- **Ripple** is making it easy to send money anywhere in the world in any currency instantly. Users simply need to load money to an active Ripple wallet through a participating gateway.
- **WorldRemit** provides an online service that lets people send money to friends and family in other countries, using a computer, smartphone or tablet.

Inclusion through blockchain-powered remittance service

- Joint effort by **Stellar**, the Stripe-backed open-source payment network, and **Oradian**, a cloud-based software provider for microfinance institutions in developing countries, is an example of blockchain-powered remittance service.
- The payment-transfer network inside Oradian is built on top of Stellar's platform and **allows 300,000 Nigerians (90% of them women) to cheaply transfer money** between microfinance institutions over the Stellar network.

Blockchain-powered digital identity for citizens in poverty

- Citizens lacking appropriate access to the financial system would gain a **higher independence and better chances for welfare** by creation of digital identity on blockchain.
- The solution can be built with the purpose of integration with external systems in order to **diminish the fraud and error possibilities** in the delivery of benefits for the financially excluded.
- Some of the key startups empowering this are **Credits.vision, OneName, ShoCard and BitNation**.

Source : CoinDesk, McKinsey, Bitcoin for the Unbanked

Why Blockchain Make Sense for Financial Inclusion (Benefits)?

No Regulations



Instant Settlement



No Branches



Digital Payments



Low Costs and Fees



Reduces Settlement Time

- Payments and remittance settlement can happen rapidly allowing **people to access their capital when they need it.**
- Time and cost efficiencies could support large amounts of small transactions or micro transactions within a trusted network.

“Trusted” Third Party Elimination

- Storing transactions in automatically shared, tamper-proof database could **eliminate the need for complicated procedures and clearing houses** and ensure that banks have their records in sync.

Eliminates Error Handling

Provides **real time tracking of transactions in a decentralized system** with no double spending or transaction repudiation.

Support Smart Transactions

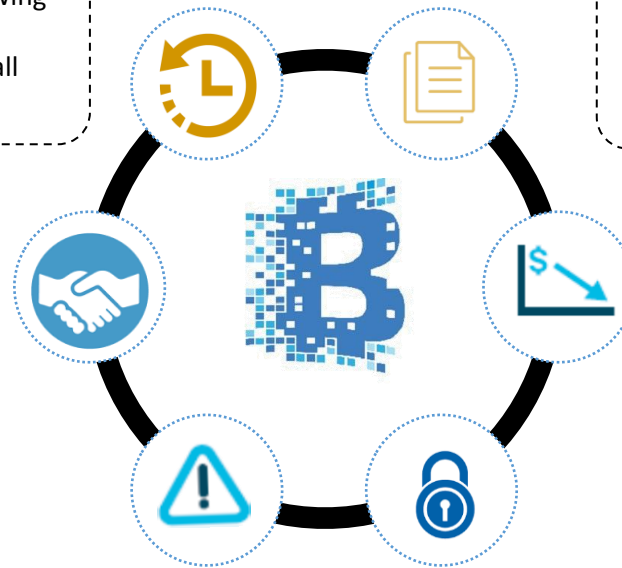
- Blockchain **supports smart contracts, transactions that include multiple assets,** transactions that include multiple parties and two-way transactions.
- This will allow the unbanked not only access to bank accounts but **access to global capital markets** as well by providing all types of value transfers.

Cost Reduction

- Blockchain can cut operational costs which banks are targeting and reach the customers at the edge of wireless and not just bank accounts.
- Santander predicted that blockchain technologies **could reduce banks' infrastructure costs** attributable to cross-border payments, securities trading and regulatory compliance by **between \$15-20 billion per annum by 2022.**

Secure Transaction Ledger Database

Secure transaction ledger database which is **shared in an established, distributed network.**



Blockchain brings speed and transparency in payments system

- Blockchain eliminates the need for intermediaries which **drastically reduce settlement time**, which in turn means that customers will be able to **access their capital when they need it**.
- Storing transactions in blockchain could eliminate the need for complicated procedures and clearinghouses, saving time, money and the risk of error. The allowance of frictionless savings and investment **gives people more control over their financial destiny**.
- The use of digital technology to embed business rules into a **contract, including automated execution of contract terms and payments will simplify complex procurement, negotiation and verification processes**.

But there are still some risks in incorporating Blockchain

Integration concerns

- Blockchain applications offer solutions that require significant changes or complete replacement of existing systems. In order to make the switch, financial institutions must strategize the transition.



Control, Security, and Privacy

- While private or permissioned blockchain and strong encryption exist, there are still cyber security concerns that need to be addressed before the general public will entrust their personal data to a blockchain solution.



Uncertain regulatory status

- If the government regulation status remains unsettled, blockchain will face a hurdle in widespread adoption by financial institutions.



Nascent/ Experimental Stage

- While most of the banks have started experimenting or developing proofs-of-concept around blockchain, there still are not any major breakthroughs in blockchain applications in the real sense.

Cultural adoption

- Blockchain represents a complete shift to a decentralized network which requires the buy-in of its users and operators.

Initial Cost

- Blockchain offers tremendous savings in transaction costs and time but the high initial capital costs could be a deterrent, which is a major concern for banks.

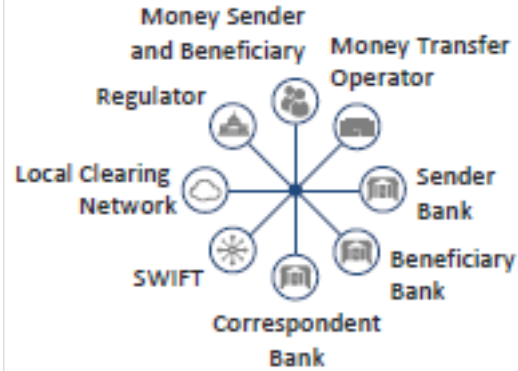


Use Cases- Financial Services

Global Payments

Summary

Conducting international money transfers through DLT could provide real-time settlement and reduce costs, enabling new business models (e.g. micropayments), and institute newer models of regulatory oversight



Insurance - P&C Claims Processing

Summary

Facilitating claims management for property and casualty (P&C) insurers on DLT can automate processing through smart contracts, improve assessment through historical claims information and reduce potential for fraudulent claims



Syndicated Loans

Summary

Utilizing DLT to automate syndicate formation, underwriting and the disbursement of funds (e.g. principal and interest payments) can reduce loan issuance time and operational risk



Trade Finance

Summary

Utilizing DLT to store financial details can facilitate the real-time approval of financial documents, create new financing structures, reduce counterparty risk and enable faster settlement



Source: World Economic Forum

Use Cases- Financial Services---Contd

Automated Compliance

Summary

Utilizing DLT to store financial information can eliminate errors associated with manual audit activities, improve efficiency, reduce reporting costs and, potentially, support deeper regulatory oversight in the future



Proxy Voting

Summary

Distributing proxy statements via DLT and counting votes via smart contracts may improve retail investor participation, automate the validation of votes and, potentially, enable personalized analyses in the future



Asset Rehypothecation

Summary

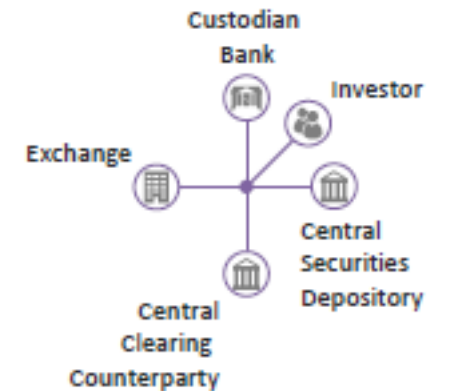
Utilizing DLT to track and manage asset rehypothecation via smart contracts can enable the real-time enforcement of regulatory control limits across the financial system and reduce settlement time



Equity Post-Trade

Summary

Utilizing DLT and smart contracts to facilitate post-trade activities can disintermediate processes, reduce counterparty and operational risk and, potentially, pave the way for reduced settlement time



Assets & Accelerators

Solution Accelerators

Multi-Signer enabled Title deed Transfer



Virtual Coin Issuance and Transfer



Cross Border, Cross Currency Routing framework



Integration Layer for Blockchain of Choice



Fund Transfer Between Bank and its Subsidiaries



Simplify Participation Deal



Bitcoin Acceptance Platform for Acquirer Merchant Services



KYC Processing



Secured Document Transfer & Verification



Loyalty points Issuance and Redemption



★ Bill Payment leveraging Blockchain



Loyalty Point Exchange



Simple solution for post trade clearing and settlement



Manage mortgage Transaction Lifecycle on Blockchain



★ Under Development

Frameworks/ Partnerships



Other Frameworks Explored





Thank You